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ABSTRACT

The previously validated Employability Skills Series was systematically translated into Spanish, and field tests were conducted, using criterion referenced measures, to establish if the materials were effective with Hispanic students. Data were collected on the achievement of 484 students on thirty-nine knowledge and twenty-five performance objectives of these competency-based materials written at approximetely a fifth-grade reading level and designed for use in a variety of instructional settings. Eighty percent of the students were at or above the criteria in sixty objectives. They showed significant improvement in their pretest-posttest gains in five of the six units. Further analysis of five factors (school level, English language ability, age, ethnic group, and reading level in Spanish) showed that (1) junior high students did not do as well as students in high schools, vocational-technical centers, community colleges, or adult centers: (2) bilingual students did better than limited English ability students: (3) adults did better than non-adults: (4) there was no consistent pattern across units on the differences between Cuban-Americans, Mexican-Americans, Puerto Rican-Americans, or other Hispanics: and (5) students scoring higher on the Spanish reading level examination did better than those with lower reading scores. It was concluded that the Spanish version is an effective instructional tool. (YLB)

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THE EMPLOYABILITY SKILLS SERIES: FIELD TRIAL RESULTS OF A SPANISH LANGUAGE VERSION FOR HISPANICS

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The Employability Skills Series: Field Test Results of a Spanish Language Version For Hispanics

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ABSTRACT

The systematic Spanish translation and field test of the previously validated, competency-based Employability Skills Series is described. Data are provided on the achievement of 484 Hispanic students on 39 knowledge and 25 performance objectives and compared with English-speaking students. Analyses are presented based on the age (adult, non-adult); language ability (limited-English-ability, bilingual); institution (junior high, senior high, vocational-technical centers, adult center, community college); ethnic group (Cuban-American, Mexican-American, Puerto Rican-American, Other Hispanic); and reading level in Spanish.

Acknowledgements

We would like to acknowledge the work and spirit of cooperation which was demonstrated by the many Dade County (Miami) Florida school administrators and teachers who worked, without pay, in the development and field testing of the Spanish language version of the Employability Skills Series. The results obtained in the field trials and the contribution that these materials will make towards more effective vocational education for Hispanics are due, in no small part, to their professionalism and dedication.

In particular we would like to acknowledge the work of the project staff in Dade County who, in the face of expected and unexpected obstacles, managed to complete the project and collect the data which made the Series and this study possible.

Also, thanks are due to Carolina M. Brennan, who did the preliminary work on using the Statistical Packages For the Social Sciences (SPSS) system for the data analysis.

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Perspectives

"Employability Skills" are the knowledges, skills, and attitudes which people need to select, locate, acquire, advance-in, and change employment, and effectively use the money they earn. Employability skills are non-technical, in the sense that they are distinct from the competencies specific to each occupation. Many employability skills are necessary for all employed people, regardless of the occupations they are in.

The Division of Vocational Education (DVE), Florida State Department of Education has recognized its importance by sponsoring a series of curricular and instructional materials development projects to produce employability skills materials. In 1971 it published the Employability Skills Guide For Work Experience Programs (Department of State, 1971), which contained relevant program goals, performance objectives, learning experiences, resources, and evaluation methods. A more comprehensive, generic list of employability skills, called the Florida Catalog Of Occupational Education Objectives (Department of State, 1973), was reviewed by a panel of 65 Florida educators and representatives of business and industry. This catalog of performance objectives and related criterion-referenced tests items became the accepted basis for all future developmental efforts. The Division next funded a project at the Center for Studies in Vocational Education, at Florida State University, to develop and field test competency-based instructional materials which would match the objectives in the catalog.

To establish the general characteristics of the series, educators were interviewed, advisory committee meetings held, and survey questionnaires mailed to teachers and educators around the state. The consensus was that the materials had to be useable in various types of classroom settings, should contain both teacher and student-oriented materials, and should be written at a fairly low reading level.

The materials were developed by a team of instructional designers, evaluation specialists, subject matter experts, editors, and graphic/art designers. Entitled the Employability Skills Series (Department of State, 1976-1977), the series consists of six written units of instruction and corresponding instructors guides (Choosing An Occupation; Your Job Search; Applying For A Job; Good Work!; Personal Finances; and, Job Changes). In addition, there is an introductory filmstrip/cassette called Your Job: Will You Keep It?, a simulation, board-type game entitled Job Scene, and an annotated resource book called A Guide To Employability Skills Materials, which is coded for materials appropriate for the educationally disadvantaged and limited-English-ability, Spanish-speaking students.

The units were prepared with knowledge objectives (which asked the student to list, identify, name, etc.) performance objectives (which asked that the student actually perform a task) corresponding test items, instructional information, and practice activities. The self-instructional, self-contained units were written at approximately a fifth grade reading level, and were designed to be used in a variety of instructional settings.

The field trials consisted of three stages: one-on-one testing which involved a small group of students; small group testing with one or two classes of students; and the field test which typically involved four-to-six classes of students. In all, 86 classes of students and 59 different teachers in 10 counties, in middle schools, high schools, and post-secondary schools were involved in the small group and field tests. Appendix 1 shows the variety of academic and vocational subject areas which the teachers represented.

The knowledge objectives were tested using a pretest/posttest format. The performance objectives were tested using checklists related to the tasks. The instructional materials were to be considered acceptable if eighty percent or more of the students reached the criterion on the posttest for each knowledge and each performance objective.

Students scored at 80 percent or higher on the posttest on 30 of the 41 knowledge objectives and at 70 percent or higher on 37 objectives. On the performance objectives, 80 percent of the students met the criteria for 20 of 23 objectives, and 70 percent met the criteria on 22 of the performance objectives. The reader may wish to consult Appendixes 2 and 3 for a description of student achievement per objective.

After inservice training for selected teachers, the English version of the Employability Skills Series was disseminated to most of Florida's middle/junior high schools, high schools, vocational-technical centers, and community colleges.

Objectives Of The Present Study

In 1977 DVE decided to produce a Spanish language version of the Employability Skills Series. The project was again given to the Center for Studies in Vocational Education (CSVE) at Florida State University. A group of recognized leaders in bilingual education in Dade County (Miami) Florida were asked to give their opinions on the general directions such an effort should take. They recommended that:

1. all six of the units, and appropriate sections of the accompanying instructor's guides be translated.
2. that each of the translated units be field tested using procedures similar to those used in testing the English language version of the series.
3. that procedures be established to insure that the major Hispanic groups be included in the field testing of the materials.
4. that spoken English components be developed to accompany and support the instruction in the written units.

DVE approved the first three recommendations, but, because of a scarcity of funds, had to postpone the translation of the game, filmstrip/cassette, and the development of the spoken-English materials.

Since the Dade County area seemed the ideal place to conduct such a project, a sub-contract was negotiated between the Dade County Public School System and CSVE. Dade County was responsible for the actual translation and field testing of the materials, while CSVE supplied personnel to lend technical assistance in the areas of instructional design and development, measurement and evaluation, and overall project

management. CSVE also supervised the graphic/art revision of the materials and the final reproduction of the series.

The field tests of the English language had left no doubts as to the effectiveness of the overall instructional strategy. The objectives of field testing the materials thus became:

1. To verify that the translation was free of any ethnic or linguistic problems for Cuban-Americans, Mexican-Americans, Puerto Rican-Americans, or other Hispanics.
2. To test if the translation of the six written units in Spanish was effective with Hispanic students.
3. To test if there were significant differences in the achievement of students grouped according to the following independent variables: 1) school level (junior high, senior high, vocational-technical center, adult center, community college); 2) English language ability (limited-English-ability, bilingual); 3) age (adult, non-adult); 4) ethnic group (Cuban-American, Mexican-American, Puerto Rican-American, Other Hispanic); and, 5) reading level in Spanish (grades 3-5, 6-8, 9).

Methods

The translation was done by the Dade County project staff, composed of a recognized leader in the field of bilingual education as the Local Coordinator, and several translators with experience in English-as-a-second-language programs for Hispanics. Simultaneously, the art/graphics utilized in the English version was modified and the materials reproduced so as to be an almost exact copy, page-for-page, of the original.

Seven of the objectives in the English version were modified to be applicable in a bilingual instructional program. For example, the objective in the English version which stated "Fill out a Social Security Application form" was modified to read, "Fill out a Social Security application form in English". In general, those symbols, signs, forms, and/or objectives which would require English usage in the real world were left in English, or reproduced in both English and Spanish. The objective in the unit entitled Personal Finances which dealt with filling out a federal income tax form was deleted from the English language version and Spanish version as well.

The rough translation was submitted to two preliminary committee reviews before going to the small group and field tests. The Ethno-Linguistic Committee, composed of a Cuban-American, a Mexican-American, and a Puerto Rican-American experienced in bilingual education for Hispanics, reviewed the translation for any cultural or linguistic problems which the Hispanic groups they represented might have with the materials. Modifications were made in the translation so that words or phrases understandable to all groups were used or, in the case where this was not possible, footnotes with the word or phrase which would communicate the proper meaning were utilized. The School Level Review Committee went over the materials to check the clarity and ease of reading. At this state, key words and phrases necessary in English were italicized in the text and placed in an expanded glossary, and the materials were revised to meet an approximately fifth grade reading level.

The small group tests were often limited to one class of students. The field tests usually consisted of four-to-five classes containing

various numbers of students, with the exception of the final unit tested, where time and the availability of subjects precluded a full-scale test. The field test subjects were selected, as much as possible, to include subjects for each of the independent variables (educational institution, English language ability, age, ethnic group, and reading level in Spanish). However, it was not possible to randomize or stratify the sample, as most subjects were chosen by class group. Some of the cells within the matrix of independent variables went underrepresented. A total of 13 bilingual teachers, and 31 classes of students from 9 schools were included in the small group tests and field tests. A total of 484 Hispanic students participated in the tests, with some different participants in each unit.

Reading level in Spanish was measured by using an instrument developed and used widely in the Dade County, Florida school system and called A Diagnostic and Evaluation System for Reading in Spanish, (Systema De Diagnostica y Evaluacion Para La Lectura En Espanol, Dade County Public Schools), hereafter referred to by its acronym in Spanish SISDELE. This test was used to establish the students' approximate reading level in Spanish, as well as to screen out those students not scoring at above the third grade level.

The instructional materials were revised after both the small group and field tests, if the percentage of students reaching the criteria for each of the knowledge and skill objectives did not reach 80 percent.

The Spanish version of the Employability Skills Series is now in the process of being disseminated to high school, vocational-technical center, adult center, and community college teachers around the state who are involved in bilingual vocational education for Hispanics, and who attend an inservice training session.

Data Analysis

There were a total of 64 objectives in the six units tested, 39 knowledge objectives and 25 performance objectives. Students scored 80 percent or higher on 37 of the 39 knowledge objectives on the posttests. On the performance objectives, 80 percent of the students met the criteria on 23 of the 25 objectives after instruction. Table 1 presents the findings for the percentage of students, by objective and unit, reaching the stipulated criteria on the pretests and the posttests for the knowledge objectives. There was significant improvement from pretest to posttest on five of the six units. In the unit entitled Your Job Search, most students entered, on the average, at or near mastery level. Table 2 shows similar findings for the percentage of students achieving the criteria on the performance objectives after instruction.

Table 1

Percent of Students Passing
on Pretest and Posttest Over Knowledge
Objective, by Unit

	n	Percent Passed			
		Pretest	95% C.I. For The Mean %	Posttest	95% C.I. For The Mean %
Your Job Search En Busca de Empleo					
List ways to find job openings.	81	85.2	(77.3,93.1)	90.	1(83.5,9[illegible].8)
Identify characteristics of employment agencies.	81	87.7	(80.3,95.0)	81.	5(72.8,90.[illegible])
List types of information in want ads in English & Spanish newspapers.	81	72.8	(62.9,82.7)	86.	4(78.8,94)
List ways to contact employers.	81	81.5	(72.8,90.1)	80.	2(71.4,89.1)
Applying For A Job Solicitando Empleo					
List ways to get applicant information.	105	49.5	(39.8,59.2)	83.8	(76.6,91.0)
List official papers needed for a job.	105	58.1	(48.5,67.7)	59.0	(49.5,68.6)
List information to give during interview.	105	44.8	(35.1,54.4)	82.9	(75.5,90.2)
List information to get during interview.	105	66.7	(57.5,75.8)	80.0	(72.2,87.8)
List preemployment test-taking tips.	105	29.5	(20.7,38.4)	79.0	(71.1,87.0)
List factors to consider before taking a job.	105	67.6	(58.1,77.1)	87.6	(81.2,94.0)
Good Work Buen Trabajo					
List consequences of being late or absent.	91	51.6	(41.2,62.1)	92.3	(86.7,97.9)
State what to do if late or absent.	91	62.6	(52.5,72.8)	90.1	(83.9,96.4)
State how to get help the first day.	91	64.8	(54.8,74.8)	92.3	(86.7,97.9)
State how to handle a mistake on the job.	91	50.5	(40.1,61.0)	90.1	(83.9,96.4)
List consequences of stealing.	91	62.6	(52.5,72.8)	93.4	(88.2,98.6)
List what to do about a safety hazard.	91	64.8	(54.8,74.8)	91.2	(85.3,97.1)
State how to propose a better method.	91	31.8	(22.1,41.6)	90.1	(83.9,96.4)
Plan three balanced meals.	91	23.1	(14.3,31.9)	81.3	(73.2,89.5)

Table 1 - Continued

	n	Percent Passed			
		Pretest	95% C.I. For The Mean %	Posttest	95% C.I. For The Mean %
Job Changes Cambios De Empleo					
List qualities desirable for promotion.	106	33.0	(23.9,42.1)	94.3	(89.9,98.8)
List steps in a promotion plan.	106	26.4	(17.9,34.9)	89.6	(83.7,95.5)
Name reasons for resigning.	106	33.0	(23.9,42.1)	96.8	(80.2,93.3)
List do's & don'ts for resigning.	106	22.6	(14.5,30.7)	95.3	(91.2,99.4)
List considerations in changing careers.	106	24.5	(16.2,32.9)	91.5	(86.1,96.9)
List steps to take after job loss.	106	23.6	(15.4,31.8)	91.5	(86.1,96.9)
Choosing An Occupation, Como Elegir Una Ocupacion					
List kinds of self-information.	76	40.8	(29.5,52.1)	96.5	(91.6,100.0)
List ways to find self-information.	76	52.6	(41.1,64.1)	97.4	(93.7,100.0)
List types & examples of occupational information.	76	26.3	(16.2,36.4)	92.1	(85.9,98.3)
Write English titles of sources of occupational information.	76	53.9	(42.5,65.4)	97.4	(93.7,100.0)
List ways to obtain occupational information.	76	22.4	(12.8,32.0)	90.8	(84.1,97.4)
Personal Finances Finanzas Personales					
List paycheck deductions.	25	44.0	(23.1,64.9)	100.0	(100.0,100.0)
Name fringe benefits.	25	24.0	(06.0,42.0)	80.0	(63.1,96.9)
List services that taxes pay for.	25	40.0	(19.4,60.6)	92.0	(80.6,100.0)
List smart shopping rules.	25	24.0	(06.0,42.0)	100.0	(100.0,100.0)
List credit buying dangers.	25	24.0	(06.0,42.0)	92.0	(80.6,100.0)
List consequences of not paying bills.	25	32.0	(12.3,51.7)	100.0	(100.0,100.0)
List reasons for keeping a budget.	25	28.0	(09.1,46.9)	96.0	(87.7,100.0)
Identify types of insurance.	25	36.0	(15.8,56.2)	96.0	(87.7,100.0)
Identify high & low interest loan sources.	25	28.0	(09.1,46.9)	92.0	(80.6,100.0)
List benefits of savings account.	25	36.0	(15.8,56.2)	100.0	(100.0,100.0)

Table 2

Percent of Students Passing
The Performance Objectives After
Instruction, By Unit

Performance Objectives	n	% Passed	95% C.I. For the Mean %
Your Job Search En Busca De Empleo			
1) Fill-in Social Security card application in English.	81	81.5	72.8,90.
2) Prepare a personal data sheet.	81	76.5	67.1,86.0
3) Locate employment agencies.	81	91.4	85.1,97.6
4) Locate sources of information for government jobs.	81	90.1	83.5,96.8
5) Write letter of application.	81	76.5	67.1,96.0
6) Telephone about job opening.	81	97.5	94.1,100.0
Applying For A Job Solicitando Empleo			
1) Complete a resume in Spanish and English.	105	92.4	87.2,97.5
2) Fill-out an application form.	105	89.5	83.6,95.5
3) Dress for an interview.	105	94.3	89.8,98.8
4) Role-play an Interview.	105	95.2	91.1,99.4
5) Write a follow-up letter.	105	80.0	72.2,87.8
Good Work Buen Trabajo			
1) Begin and finish task on time.	91	100.0	100,100
2) Record a telephone message in Spanish and in English.	91	89.0	82.5,95.6
3) Follow safety rules.	91	100.0	100,100
4) Complete task without wasting materials.	91	100.0	100,100
5) Clean & return materials after task.	91	100.0	100,100
6) Follow written instructions.	91	100.0	100,100
7) Follow oral instructions in Spanish.	91	97.8	94.7,100.0
Job Changes Cambios De Empleo			
1) Write a letter of resignation.	106	100.0	100,100
Choosing An Occupation Cómo Elegir Una Ocupación			
1) Complete Occupation Exploration Worksheet.	76	98.7	96.1,100.0
2) Complete worksheet matching self to occupation.	76	100.0	100.0,100.0
Personal Finances Finanzas Personales			
1) Balance a personal budget.	25	96.1	87.7,100.0
2) Fill out a deposit slip in English.	25	96.0	87.7,100.0
3) Write a check in English.	25	92.0	80.6,100.0
4) Balance a checkbook.	25	100.0	100.0,100.0

Five outcome (dependent) variables were used to evaluate the effectiveness of the instructional materials contained in the six units of the Spanish version of the Series. The following definitions were used for those dependent variables:

1. Pretest total score (TPRE) is the student's total number of correct answers, per unit, measured on a pass-fail (1,0) basis, over the knowledge objectives in the pretest. The maximum possible score (perfect score) varies from unit to unit.
2. Posttest total score (TPOST) is the student's total number of correct answers, per unit, measured on a pass-fail (1,0) basis, over the knowledge objectives in the posttest. The maximum possible score (perfect score) varies from unit to unit.
3. Gain score (GAIN) is equal to TPOST minus TPRE.
4. Performance test total score (PERT) is the total score for each student, summed across all performance objectives in the unit, with each objective measured on a pass-fail (1,0) basis. The maximum possible score (perfect score) varies from unit to unit.
5. General achievement score (GACHV) is the total score, per unit, of TPOST and PERT. The maximum possible score (perfect score) varies from unit to unit.

Table 3 contains the possible minimum and maximum values for the above mentioned five dependent variables for each unit in the Series.

Table 3

Minimum and Maximum Possible Values For
Five Dependent Variables, Per Unit

Unit	Minimum, Maximum				
	TPRE	TPOST	GAIN	PERT	GACHV
Your Job Search	0,4	0,4	0,4	0,6	0,10
Applying For A Job	0,6	0,6	0,6	0,5	0,11
Good Work	0,8	0,8	0,8	0,7	0,15
Job Changes	0,6	0,6	0,6	0,1	0,7
Choosing An Occupation	0,5	0,5	0,5	0,2	0,7
Personal Finances	0,10	0,10	0,10	0,4	0,14

Another way to test program effectiveness statistically is to use the two-group, correlated, student t-test between TPRE and TPOST. Table 4 contains a summary of the t-test statistic. The conclusion of effectiveness drawn from Table 1 is supported by Table 4. All of the t-values testing pre/posttest improvement were found to be significant at $\alpha = .01$ level, except for the Your Job Search unit, where no statistical significance was found at the $\alpha = .01$ or .05 levels.

Table 4

Paired t-test for the Difference (change)
Between Total Posttest (TPOST) and Total Pretest (TPRE)
Over Knowledge Objectives, Per Unit

Unit	n	Mean TPOST	Mean TPRE	Gain	t-value
Your Job Search	81	3.38(3.16,3.61)*	3.27(3.06,3.49)*	.11(0,.32)*	1.08
Applying For A Job	705	4.72(4.45,5.0)	3.16(2.75,3.57)	1.56(1.17,1.95)	7.97**
Good Work!	91	7.21(6.93,7.49)	4.12(3.66,4.58)	3.09(2.66,3.52)	14.3**
Job Changes	106	5.49(5.34,5.64)	1.63(1.41,1.85)	3.86(3.6,4.12)	29.01**
Choosing An Occupation	76	4.74(4.62,4.86)	1.96(1.73,2.20)	2.78(2.52,3.03)	21.95**
Personal Finances	25	9.48(9.24,9.72)	3.16(2.56,3.76)	6.32(5.59,7.05)	17.82**

* 95% confidence interval
** Significant at $\alpha = .01$

The contribution of each of the five independent variables (school level, English language ability, age, ethnic group, and reading level in Spanish) was measured by an independent t-test, or one-way analysis of variance (ANOVA), depending upon the number of levels of the variable in question. For those factors with two levels the independent t-test was used; one-way ANOVA was used with factors with more than two levels.

Table 5 summarizes the t-test results for the age factor for each unit. The t-test values were found to be significant in three of the six units, with the adults scoring higher than non-adults. For the units entitled Your Job Search and Choosing An Occupation, no significance was found at the $\alpha = .05$ level. No comparison by age group was possible with the unit Personal Finances, since all the subjects (n = 25) were adults.

Table 5

t-Test On General Achievement (GACHV), by Age Group, per Unit

Unit Title	n	Mean for Adult (10)	Mean for Non-Adult (9)	t-Value
1) Your Job Search	81	8.55(n_1= 51)	8.47(n_2=30)	.22
2) Applying For A Job	105	9.89(n_1= 66)	8.13(n_2= 39)	5.05**
3) Good Work!	91	14.40(n_1= 70)	13.0(n_2= 21)	4.38**
4) Job Changes	106	6.67(n_1= 51)	6.33(n_2= 6.33)	2.24*
5) Choosing An Occupation	76	6.71(n_1= 41)	6.74(n_2= 35)	.29
6) Personal Finances	25	13.32***	--	--

* Significant at α = .05
** Significant at α = .01
*** All subjects were adult; 95% confidence interval (13.04, 13.61)

The t-test results for the English language ability factor are summarized in Table 6. Only in the unit entitled Applying For A Job was significance found at α = .01 level, with bilingual students scoring higher than limited-English-ability students.

Table 6

T-Test on the General Achievement (GACHV), by English Language Ability, per Unit

Unit Title	n	Mean for Bilingual	Mean for limited-English-Ability	T-Value
1) Your Job Search	81	8.76(n_1=25)	8.41(n_2=56)	.88
2) Applying For A Job	105	10.57(n_1=14)	9.03(n_2=91)	2.88**
3) Good Work!	50	--	14.48*	--
4) Job Changes	106	6.46(n_2=65)	6.51(n_1=65)	.28
5) Choosing An Occupation	76	6.79(n_2= 28)	6.69(n_1=48)	.77
6) Personal Finances	25	13.0 (n_2=10)	13.53(n_1=15)	2.0

* All subjects were Limited English Ability; 95% confidence interval (14.27, 14.69)

** Significance at α = .01

For the remaining factors (school level, ethnic group, and reading level in Spanish) ANOVA was used. Tables 7a to 22b summarize these results.

As shown in Tables 7a to 11b, the school level factor contributed significantly to the variability of GACHV for two units: Applying For A Job (Tables 8a and 8b at α = .01) and Good Work! (Tables 9a and 9b at α = .01). The junior high school level scored the lowest in both units. For the unit entitled Personal Finances ANOVA could not be used because of insufficient cell size.

Table 7a

ANOVA on General Achievement (GACHV),
by School Level, for
Your Job Search Unit

Source	df	Sum of Squares	Mean Square	F-Ratio
Between groups	3	18.36	6.12	2.29
Within groups	72	192.64	2.66	
Total	75	211.0		

Table 7b

Cell Means by School Level

School level	n	Mean	95% Confidence Interval for Mean
Junior High	13	8.08 (3)*	7.36,8.79
Senior High	19	8.79 (1)	8.38,9.20
Vo-Tech Center	31	8.78 (2)	8.18,9.57
Adult Center	13	7.62 (4)	6.32,8.91
All Groups	76	8.50	

* Rank of Group Mean

Table 8a

ANOVA On General Achievement (GACHV),
by School Level, for
Applying For A Job Unit

Source	df	Sum of Square	Mean Square	F-Ratio
Between Groups	3	97.04	32.35	11.10**
Within Groups	97	282.73	2.91	
Total	100	379.77		

** Significant at $\alpha = .01$

Table 8b

Cell Means by School Level

School Level	n	Mean	95% Confidence Interval for Mean
Junior High	20	7.50 (4)*	6.18,8.82
Senior High	19	8.79 (3)	8.08,9.50
Vo-Tech Center	42	10.10 (1)	9.73,10.46
Adult Center	20	9.55 (2)	8.92,10.18
All Groups	101	9.23	

* Rank of Group Mean

Table 9a

ANOVA on General Achievement (GACHV),
by School Level, for
Good Work Unit

Source	df	Sum of Squares	Mean Square	F-Ratio
Between Groups	3	33.49	11.16	6.70**
Within Groups	87	144.97	1.67	
Total	90	178.46		

** Significant at α = .01

Table 9b

Cell Means By School Level

School Level	n	Mean	95% Confidence Interval for Mean
Junior High	21	13.0 (4)*	12.00,14.0
Senior High	19	14.53 (1)	14.23,14.82
Vo-Tech Center	34	14.47 (2)	14.15,14.79
Adult Center	17	14.12 (3)	13.64,14.59
All Groups	91	14.08	

* Rank of Group Mean

Table 10a

ANOVA on General Achievement (GACHV),
by School Level, for
Job Changes Unit

Source	df	Sum of Squares	Mean Squares	F-Ratio
Between Groups	3	3.13	1.04	1.68
Within Groups	102	63.36	.62	
Total	105	66.49		

Table 10b

Cell Means By School Level

School Level	n	Mean	95% Confidence Level for Mean
Junior High	44	6.34 (3)*	6.09,6.59
Senior High	17	6.71 (1)	6.35,7.06
Vo-Tech Center	34	6.65 (2)	6.38,6.92
Adult Center	11	6.27 (4)	5.75,6.80
All Groups	106	6.49	

* Rank of Group Mean

Table 11a

ANOVA on General Achievement (GACHV), by School Level, for Choosing An Occupation Unit

Source	df	Sum of Squares	Mean Squares	F-Ratio
Between Groups	2	.50	.28	.88
Within Groups	73	20.70	.28	
Total	75	21.20		

Table 11b

Cell Means By School Level

School Level	n	Mean	95% Confidence Interval for Mean
Junior High	35	6.74 (2)*	6.55,6.94
Vo-Tech Center	27	6.63 (3)	6.41,6.85
Adult Center	14	6.86 (1)	6.65,7.07
All Groups	76	6.72	

* Rank of Group Mean

As shown in Tables 12a to 16b, the ethnic group factor contributed significantly to the variability of General Achievement (GACHV) for two units: Your Job Search (Tables 12a and 12b at $\alpha = .01$) and Good Work! (Tables 14a and 15b at $\alpha = .01$). Although there is statistical significance for the difference between ethnic group means on these two units, in a practical sense, the difference is unimportant in that all groups surpassed the 80 percent criterion.

Table 12a

ANOVA on the General Achievement (GACHV), by Ethnic Group, for Your Job Search Unit

Source	df	Sum of Squares	Mean Square	F-Ratio
Between Groups	3	23.69	7.90	3.05*
Within Groups	77	191.80	2.59	
Total	77	215.49		

* Significant at $\alpha = .05$

Table 12b

Cell Means by Ethnic Group

Ethnic Group	n	Mean	95% Confidence Interval for Mean
Cuban-American	31	7.94 (4)*	7.35,8.52
Mexican-American	09	8.56 (2)	6.52,10.59
Puerto Rican-American	10	8.2 (3)	6.70,9.7
Other Hispanic	28	9.18 (1)	8.84,9.51
All Groups	78	8.49	

* Rank of Group Mean

Table 13a

ANOVA on the General Achievement (GACHV), by Ethnic Group, for Applying For A Job Unit

Source	df	Sum of Squares	Mean Squares	F-Ratio
Between Groups	3	24.03	8.01	2.23
Within Groups	99	356.38	3.60	
Total	102	300.41		

Table 13b

Cell Means by Ethnic Group

Ethnic Group	n	Mean	95% Confidence Interval for Mean
Cuban-American	28	9.25 (3)*	9.66,9.84
Mexican-American	18	9.61 (1)	8.86,10.36
Puerto Rican-American	18	8.22 (4)	6.75,9.70
Other Hispanic	39	9.51 (2)	8.97,10.05
All Groups	103	9.23	

* Rank of Group Mean

Table 14a

ANOVA on General Achievement (GACHV),
by Ethnic Group, for
Good Work! Unit

Source	df	Sum of Squares	Mean Squares	F-Ratio
Between Groups	2	12.30	6.15	3.20*
Within Groups	85	163.52	1.92	
Total	87	175.82		

* Significant at $\alpha = .05$

Table 14b

Cell Means by Ethnic Group

Ethnic Group	n	Mean	95% Confidence Interval for Mean
Cuban-American	39	14.46 (1)*	14.22,14.71
Puerto Rican-American	19	13.79 (2)	12.71,14.87
Other Hispanic**	30	13.67 (3)	13.17,14.16
All Groups	88	14.05	

* Rank of Group Mean
** Insufficient numbers of Mexican-Americans were represented in the data to include them in this analysis.

Table 15a

ANOVA on General Achievement
Total Posttest and Total (GACHV),
by Ethnic Group, for
Job Changes Unit

Source	df	Sum of Squares	Mean Squares	F-Ratio
Between Groups	2	.32	.16	.24
Within Groups	96	62.41	.65	
Total	98	62.73		

Table 15b

Cell Means by Ethnic Group

Ethnic Group	n	Mean	95% Confidence Interval for Mean
Cuban-American	52	6.46 (2)*	6.22,6.70
Puerto Rican-American	21	6.43 (3)	6.06,6.80
Other Hispanic**	26	6.58 (1)	6.29,6.86
All Groups	99	6.48	

* Rank of Group Mean
** Insufficient numbers of Mexican-Americans were represented in the data to include them in this analysis.

Table 16a

ANOVA on General Achievement (GACHV),
by Ethnic Group, for
Choosing An Occupation Unit

Source	df	Sum of Squares	Mean Squares	F-Ratio
Between Groups	2	.75	.37	1.65
Within Groups	69	15.70	.23	
Total	71	16.44		

Table 16b

Cell Means by Ethnic Group

Ethnic Group	n	Mean	95% Confidence Interval for Mean
Cuban-American	31	6.84 (1)*	6.70,6.98
Puerto Rican-American	14	6.57 (3)	6.20,6.95
Other Hispanic	27	6.82 (2)	6.62,7.00
All Groups**	72	6.78	

* Rank of Group Mean
** Insufficient numbers of Mexican-Americans were represented in the data to include them in this analysis.

As shown in Tables 17a to 22b, the Spanish reading level factor contributed significantly to the variability of GACHV for three units: Your Job Search (Tables 17a and 17b at $\alpha = .01$), Applying For A Job (Tables 18a and 18b at $\alpha = .01$), and Good Work! (Tables 19a and 19b at $\alpha = .01$). For each of these three units, the Spanish reading ability, grade level 9, scored the highest, reading level grades 6-8 scored next highest, and reading level grades 5 and less scored the lowest.

As a consistent finding, Table 23 demonstrates a significant correlation for these three units between reading level in Spanish and total posttest score over the knowledge objectives (TPOST).

Table 17a

ANOVA on General Acheivement (GACHV), by Spanish Reading Level (SISDELE) Test, for Your Job Search Unit

Source	df	Sum of Squares	Mean Square	F-Ratio
Between Groups	2	24.39	12.20	4.91**
Within Groups	78	193.83	2.49	
Total	80	218.22		

** Significant at $\alpha = .01$

Table 17b

Cell Means by SISDELE Test

SISDELE Group	n	Mean	95% Confidence Interval for Mean
Reading Grade levels 4&5	20	7.60 (3)*	6.49,8.71
Reading Grade levels 6,7&8	17	8.53 (2)	7.80,9.26
Reading Grade level 9	44	8.93 (1)	8.59, 9.28
All Groups	81	8.52	

* Rank of Group Mean

Table 18a

ANOVA on General Achievement (GACHV), by Spanish Reading Level (SISDELE) Test, for Applying For A Job Unit

Source	df	Sum of Squares	Mean Square	F-Ratio
Between Groups	2	49.85	24.92	7.58**
Within Groups	102	335.20	3.29	
Total	104	385.05		

** Significant at $\alpha = .01$

Table 18b

Cell Means by SISDELE

SISDELE Group	n	Mean	95% Confidence Interval for Mean
Grade levels 3, 4&5	22	8.05 (3)*	7.33,8.76
Grade levels 6, 7&8	37	9.16 (2)	8.37,9.95
Grade level 9	46	9.87 (1)	9.48,10.26
All Groups	105	9.24	

* Rank of Group Mean

Table 19a

ANOVA on General Achievement (GACHV), by Spanish Reading Level (SISDELE) Test, for Good Work! Unit

Source	df	Sum of Squares	Mean Square	F-Ratio
Between Groups	2	24.79	12.40	7.1**
Within Groups	88	153.67	1.75	
Total	90	178.46		

** Significant at $\alpha = .01$

Table 19b

Cell Means by SISDELE

SISDELE Group	n	Mean	95% Confidence Interval for Mean
Grade levels 4&5	25	13.32 (3)*	12.43,14.21
Grade levels 6, 7&8	16	13.88 (2)	13.26,14.49
Grade level 9	50	14.52 (1)	14.33,14.71
All Groups	91	14.08	

* Rank of Group Means

Table 20a

ANOVA on General Achievement (GACHV),
by Spanish Reading Level (SISDELE) Test, for
Job Changes Unit

Source	df	Sum of Squares	Mean Square	F-Ratio
Between Groups	2	1.96	.98	1.56
Within Groups	103	64.53	.63	
Total	105	66.50		

Table 20b

Cell Means by SISDELE

SISDELE Group	n	Mean	95% Confidence Interval for Mean
Grade levels 4&5	22	6.23 (3)*	5.84,6.61
Grade level 6, 7&8	21	6.52 (2)	6.18,6.87
Grade level 9	63	6.57 (1)	6.38,6.77
All Groups	106	6.49	

* Rank of Group Mean

Table 21a

ANOVA on General Achievement (GACHV), by Spanish Reading Level (SISDELE) Test, for Choosing An Occupation Unit

Source	df	Sum of Squares	Mean Square	F-Ratio
Between Groups	2	.56	.28	.99
Within Groups	73	20.64	.28	
Total	75	21.10		

Table 21b

Cell Means by SISDELE

SISDELE Group	n	Mean	95% Confidence Interval for Mean
Grade levels 3, 4&5	16	6.56 (3)*	6.17,6.95
Grade levels 6, 7&8	20	6.80 (1)	6.61,6.99
Grade level 9	40	6.75 (2)	6.59,6.91
All Groups	76	6.72	

* Rank of Group Mean

Table 22a

ANOVA on General Achievement (GACHV),
by Spanish Reading Level (SISDELE) Test, for
Personal Finanace Unit

Source	df	Sum of Squares	Mean Square	F-Ratio
Between Groups	1	.04	.04	.08
Within Groups	23	11.40	.50	
Total	24	11.44		

Table 22b

Cell Means by SISDELE

SISDELE	n	Mean	95% Confidence Interval for Mean
Grade levels 4, 5,6&7	11	13.36 (1)*	13.02,13.7
Grade level 9	14	13.29 (2)	12.81,13.76
All Groups	25	13.32	

* Rank of Group Mean

Table 23

Pearson Correlation Between
TPOST Score and
Spanish Reading Level (SISDELE) Test,
for Reading Grade Levels 3-9

Unit	n	Correlation,r
Your Job Search	81	.43**
Applying For A Job	105	.20*
Good Work!	91	.43**
Job Changes	106	.16
Choosing An Occupation	76	.14
Personal Finances	25	.01

* Significant at α = .05
** Significant at α = .01

As a Summary, Table 24 presents the statistically significant findings by factor and unit of instruction.

Table 24

Overview of Statistically Significant Findings, by Factor and Unit

	School Level	English Language Ability	Age	Ethnic Group	Spanish Reading Level
Your Job Search				*	**
Applying For A Job	**	**	**		**
Good Work!	**		**	*	**
Job Changes			*		
Choosing An Occupation					
Personal Finances					

* Significant at $\alpha = .05$
** Significant at $\alpha = .01$

Final Remarks On The Data Analysis

For the purposes of this study, the data analysis was limited to t-tests and one-way analyses of variance with a measurement of the main effects. The nature of the data did not allow for the testing of second order effects.

The total score per unit (General Achievement-GACHV) was used as the outcome (dependent) variable in the analysis of variance. A covariate analysis was not conducted because the assumption of parallelism could not be made (Cronbach, Snow, 1977) and because no control over the pre-test scores was desired (Winer, 1971).

Summary and Conclusions

The small group and field tests of the Spanish version of the Employability Skills Series were conducted to establish if the materials, using criterion-referenced measures, were effective with Hispanic students. Of the 64 knowledge and performance objectives in the Spanish version, 80 percent of the students were at or above the criteria in 60 objectives, or 93.75 percent of the objectives. Students showed significant improvement in their pretest-posttest gains in five of the six units, the exception being a unit in which the students showed high pretest scores, many exceeding the mastery level.

Further analysis on differences based upon the levels of five factors (school level, English language ability, age, ethnic group, and reading level in Spanish) showed that:

- junior high school students did not do as well as students in high schools, vocational-technical centers, or adult centers
- bilingual students did better than limited English ability students
- adults did better than non-adults
- there was no consistent pattern across units on the differences between Cuban-Americans, Mexican-Americans, Puerto Rican-Americans, or Other Hispanics, perhaps as a result of the work done by the Ethno-Linguistic committee.
- students scoring higher on the Spanish reading level examination did better than those with lower reading scores.

Based upon the number of students reaching or surpassing the criteria of the objectives in the materials, and the indications of only minor differences between groups, it can be concluded that the Spanish language version of the Employability Skills Series is an effective instructional tool for transmitting these crucial knowledge, skills, and attitudes to Hispanic students similar to those represented in this study.

Appendix 1

Number of Instructors Involved in Small Group and Field Tests by Instructor's Subject Area and Module Tested

Instructor's Subject Area	Choosing An Occupation	Your Job Search	Applying For A Job	Good Work!	Personal Finances	Job Changes	Game	Filmstrip	Total[a]
Agri-Business					1				1
Business		1	2	3	4	1		1	12
DCT/Work Experience	4	1		4	1	2	2	2	16
Distributive	1					3			4
Home Economics	2		2	1			1	1	7
Industrial Arts		1					1		2
Alternative Learning	1			1	1	2			5
Business Math	1				3				4
Language Arts	2	2	2	1			4	3	14
Mathematics					3				3
Psychology			1						1
Reading				1					1
Social Studies			2				2	1	5
Guidance		1							1
Occupational Specialist	1	2	3	1	1	1		1	10
Total	12	8	12	12	14	9	10	9	86[a]
Number of counties in which tested	5	5	4	5	5	5	2	3	

[a]This total includes instructors who taught more than one module.

Appendix 2

Field-Test Results: Percent of Students At or Above Criterion on Pretest and Posttest Over Knowledge Objectives

Objective[a]	n	Percent At or Above Criterion	
		Pretest	Posttest
Choosing An Occupation			
List kinds of self-information.	177	1	69
List ways to find self-information.	176	3	80
List types & examples of occupational information.	174	0	73
Write titles of sources of occupational information.	170	1	77
List ways to obtain occupational information.	164	27	79
Job Search			
List ways to find job openings.	108	41	81
Identify characteristics of employment agencies.	105	64	86
List types of information in want ads.	103	58	84
List ways to contact employers.	104	55	91
Applying For A Job			
List ways to get applicant information.	162	45	77
List official papers needed for a job.	162	37	86
List information to give during interview.	145	3	39
List information to get during interview.	145	5	41
List preemployment test-taking tips.	126	2	79
List factors to consider before taking a job.	124	57	86
Good Work			
List consequences of being late or absent.	151	26	85
State what to do if late or absent.	151	38	83
State how to get help the first day.	151	75	94
State how to handle a mistake on the job.	150	31	63
List consequences of stealing.	150	58	93
List what to do about a safety hazard.	150	66	97
State how to propose a better method.	150	77	97
Plan three balanced meals.	147	14	56

[a]A short phrase representing the content of the objective is listed here. The full objectives, with conditions and standards, are listed in the instructor's guide for each module.

Appendix 2 - Continued

Objective	n	Percent At or Above Criterion Pretest	Posttest
Personal Finances			
List paycheck deductions.	42	45	98
Name fringe benefits.	42	64	83
List services that taxes pay for.	42	76	93
List smart shopping rules.	40	3	100
List credit buying dangers.	39	5	95
List consequences of not paying bills.	39	56	100
List reasons for keeping a budget.	66	27	86
Identify types of insurance.	55	98	100
Identify high & low interest loan sources.	55	60	84
List benefits of savings account.	55	60	76
Fill out a deposit slip.	40	48	83
Write a check.	51	67	80
Job Changes			
List qualities desirable for promotion.	139	3	95
List steps in a promotion plan.	138	1	86
Name reasons for resigning.	136	6	90
List do's & don'ts for resigning.	137	1	82
List considerations in changing careers.	131	1	79
List steps to take after job loss.	131	2	83
Filmstrip, Your Job: Will You Keep It?			
List reasons for keeping a job.	94	38	39
Identify examples of job skills.	94	66	81
Identify examples of employability skills.	94	63	81
List procedures for following instructions.	93	47	71
List good work habits.	93	38	48
List problems caused by poor employability skills.	93	59	63
List reasons why people lose jobs.	94	82	91

Appendix 3

Field-Test Results: Percent of Students At or Above Criterion on Posttest Over Performance Objective

Objective[a]	n	Percent At or Above Criterion[b]
Choosing An Occupation		
Complete Occupation Exploration Worksheet.	156	91
Complete worksheet matching self to occupation.	155	90
Job Search		
Fill in Social Security card application.	133	96
Locate employment agencies.	122	90
Locate sources of information for government jobs.	115	93
Write letter of application.	105	90
Telephone about a job opening.	88	92
Applying For A Job		
Complete a resume.	218	86
Fill out an application form.	203	67
Dress for an interview.	78	95
Role-play an interview.	77	84
Write a follow-up letter.	178	81
Good Work!		
Begin & finish a task on time.	146	97
Record a telephone message.	155	100
Follow safety rules.	145	99
Complete task without wasting materials.	145	98
Clean & return materials after task.	144	99
Follow written instructions.	145	98
Follow oral instructions.	145	98

[a]A short phrase representing the activity specified in the objective is listed here. The full objectives, with conditions & standards, are listed in the instructor's guides.
[b]As scored by the instructor.

Appendix 3 - Continued

Objective	n	Percent At or Above Criterion
Personal Finances		
Fill out an income tax form.	53	74
Balance a personal budget.	47	72
Balance a checkbook.	51	82
Job Changes		
Write a letter of resignation.	136	95

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